FCC 92-440

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Expanded Interconnection with Local Telephone Company Facilities	)	CC Docket No. 91-141
	)	
Amendment of the Part 69 Allocation of General Support Facility Costs	)	CC Docket No. 92-222

REPORT AND ORDER AND NOTICE OF PROPOSED RULEMAKING

Adopted: September 17, 1992 Released: October 19, 1992

Comment Date: December 4, 1992
Reply Date: December 21, 1992

By the Commission: Chairman Sikes, concurring in the result, dissenting in part and issuing a separate statement; Commissioners Quello, Marshall, and Barrett issuing separate statements.

Table of Contents

I. INTRODUCTION

A. Summary

1. In this Order, we take a historic step in the process of opening the remaining preserves of monopoly telecommunications service to competition. The measures that we adopt today will promote increased competition in the interstate access market by requiring that the Tier 1 local exchange carriers (LECs)[1] offer expanded interconnection to all interested parties, permitting competitors and high volume users to terminate their own special access transmission facilities at LEC central offices. These LECs are required to offer physical collocation to all interconnectors that request it, though the parties remain free to negotiate satisfactory virtual collocation arrangements.[2]

2. Our decision in this proceeding represents one of many steps that the Commission is taking to ensure that telecommunications customers obtain the full benefits of technological advances that have spurred the development of new fiber optic and radio networks that compete with existing LEC services.[3] This growing competition will expand service choices for telecommunications users, heighten incentives for efficiency, speed technological innovation, and increase pressure for cost-based prices.

3. We here make numerous decisions necessary to turn our expanded interconnection policy into reality on an expeditious basis. Tier 1 LECs are required to file expanded interconnection tariffs for special access within 120 days of the release of this Order. These tariffs will include connection charges designed to compensate the LECs for services offered to inter-

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[1] Tier 1 LECs are companies having annual revenues from regulated telecommunications operations of $100 million or more. Commission Requirements for Cost Support Material to be Filed with 1990 Annual Access Tariffs, 5 FCC Rcd 1364, 1364 (Common Carrier Bur. 1990) (defining Tier 1 LECs using the criteria used to define Class A companies in 47 C.F.R. §§ 32.11(a) & 32.11(e)).

[2] For a description of physical and virtual collocation, see infra ¶¶ 39-46.

[3] See, e.g., Amendment of the Commission's Rules to Establish New Personal Communications Services, Notice of Inquiry, 5 FCC Rcd 3995 (1990), Policy Statement and Order, 6 FCC Rcd 6601 (1991), Notice of Proposed Rulemaking, 7 FCC Rcd 5676 (1992); Filing and Review of Open Network Architecture Plans, CC Docket No. 88-2, Phase I, 4 FCC Rcd 1 (1988), recon., 5 FCC Rcd 3084 (1990), compliance filings approved in part, 5 FCC Rcd 3103 (1990), erratum, 5 FCC Rcd 4045 (1990), pet. for recon. pending, pets. for rev. pending, California v. FCC, No. 90-70336 (9th Cir., filed July 5, 1990), further requirements established, 6 FCC Rcd 7646 (1991), pet. for rev. pending, MCI Telecommunications Corp. v. FCC, No. 92-70189 (9th Cir., filed Feb. 19, 1992); Intelligent Networks, Notice of Inquiry, 6 FCC Rcd 7256 (1991).

connectors. The LECs will not be allowed to impose a contribution charge at this time. Instead, we are proposing to eliminate the only regulatory support flow that has been identified in this proceeding as potentially warranting a contribution charge -- the over-allocation of general support facility (GSF) costs to special access.[4] We also grant the Tier 1 LECs additional special access pricing flexibility in light of the increased competition that will result from this decision. We believe that these measures will establish an equitable regulatory framework for increased competition in the interstate special access market.

B. Background

4. Although the LECs currently provide most interstate access service, a growing number of Competitive Access Providers (CAPs) have entered the access market in recent years, deploying fiber-optic rings or, in some cases, microwave systems, to serve the needs of large communications-intensive businesses, predominantly in metropolitan centers.[5] CAPs have formed strategic partnerships with and attracted major investments from cable television companies, electric utilities, large construction firms, and other entities with extensive financial resources. At present, CAPs generally are limited to providing end-to-end interstate special access connections, for example, between customer premises and interexchange carrier (IXC) points of presence (POPs), completely bypassing LEC facilities. The LECs' current special access tariffs make it economically infeasible for customers to combine their own or CAP facilities with portions of the LEC network to satisfy their special access needs.

5. Under the current tariffs, interstate special access customers generally must pay two channel termination charges: (1) a charge covering transmission from the customer's premise to the LEC central office; and (2) a

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[4] The LECs may file requests seeking Commission approval of a contribution charge in the future to recover specifically identified regulatory support flows or non-cost-based allocations recovered through rates for special access services subject to competition.

[5] These competitors now carry significant amounts of high capacity special access traffic in certain urban centers. Twenty-three CAPs reported investing $82.6 million and deploying 2,071 route miles of fiber to 5,891 customer locations by the end of 1991. These CAPs reported operating in cities of various sizes throughout the country, including Atlanta, Boston, Chicago, Dallas, Detroit, Houston, Indianapolis, Los Angeles, Minneapolis, New York, Newark, Philadelphia, Pittsburgh, San Francisco, Seattle, and Washington, D.C., as well as Princeton, Cambridge, Orlando, Tampa, Portland, Rochester, Kansas City, Birmingham, Tulsa, Des Moines, Grand Rapids, and certain suburban areas. See Kraushaar, Fiber Deployment Update, End of Year 1991 at 30-35 (FCC Common Carrier Bureau, Industry Analysis Div., Mar. 20, 1992).

charge covering transmission from the LEC central office to an IXC POP.[6] In addition, special access customers must pay for any necessary interoffice transmission when the IXC POP and the customer premises are not served by the same LEC central office. Under this structure, a full channel termination charge applies regardless of the length of the connection between the CAP or other customer and the LEC central office. Consequently, a customer using CAP facilities to a point just outside of the LEC central office must pay a full channel termination charge for interconnection to the central office in addition to applicable CAP charges. This tariff structure makes it economically infeasible for customers to use LEC facilities between their premises and a LEC central office, and CAP facilities between that LEC office and the IXC POP, for example. Customers either must use LEC facilities for the entire special access connection, or bypass the LEC completely and use alternate facilities to obtain end-to-end connections between their premises and the IXC POP.

6. We initiated this proceeding last year to consider CAP requests for new interstate interconnection arrangements allowing them to interconnect at, or near, the LEC central office under rates, terms, and conditions that the CAPs argue would more accurately reflect the facilities they use.[7] In doing so, we issued a Notice of Proposed Rulemaking (Notice) proposing specific policies to govern expanded interconnection for special access service, and adopted a Notice of Inquiry concerning expanded interconnection for switched transport service.[8] Sixty-six parties filed comments and 62 filed replies.[9]

7. In considering interstate expanded interconnection issues, we benefit greatly from the states' experiences. The New York Public Service Commission, for example, has ordered LECs in its jurisdiction to allow CAPs and others to interconnect with both unswitched and switched intrastate services at LEC central offices, using either physical collocation or a form

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[6] For the sake of simplicity, we will assume that the special access line connects the user's premises with an IXC POP.

[7] On November 14, 1989, Metropolitan Fiber Systems (MFS) filed a Petition for Rulemaking in which it asked the Commission, among other things, to develop rules providing CAPs with interconnection to LEC networks on reasonable and nondiscriminatory terms through the unbundling of special access tariffs. Teleport Communications Group (Teleport) filed a Petition for Declaratory Ruling on March 27, 1987 that raised similar issues.

[8] Expanded Interconnection with Local Telephone Company Facilities, Notice of Proposed Rulemaking and Notice of Inquiry, 6 FCC Rcd 3259 (1991) (Notice), erratum, 6 FCC Rcd 4818 (1991), Supplemental Notice of Proposed Rulemaking, 6 FCC Rcd 5809 (1991).

[9] Parties filing formal comments or replies are listed in Appendix A.

of virtual collocation as an alternative.[10] The Illinois, Massachusetts, and California commissions also have approved LEC intrastate expanded interconnection offerings developed in order to settle interconnector complaints.[11] Colorado, North Dakota, Maryland, Pennsylvania and other states have considered related issues.[12]

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10 See Regulatory Response to Competition, Opinion No. 89-12, Case 29469 at 21-32 (N.Y. PSC May 16, 1989) (ordering private line interconnection); Order Regarding OTIS II Compliance Filing, Cases 29469 and 88-C-004 (N.Y. PSC May 8, 1991) (approving physical collocation tariff for private line interconnection); Comparably Efficient Interconnection Arrangements, Opinion No. 91-24, Cases 88-C-004, 88-C-063 and 91-C-1174 (N.Y. PSC Nov. 25, 1991) (ordering LECs to unbundle the link (transmission) and port (connection) portions of local loops); Pooling, Collocation and Access Rate Design, Opinion No. 92-13, Case 28425 at 23-70 (N.Y. PSC May 29, 1992) (ordering interconnection to switched services).

11 See Access Charges, the Administration of the High Cost Fund, Administration of the Illinois Small Carrier Association and Other Telecommunications Issues, Third Interim Order, Docket No. 90-0425 (Ill. Commerce Comm'n Feb. 5, 1992) (approving interconnection agreement between Illinois Bell Telephone and Teleport); Complaint of Teleport Communications-Boston Seeking the Provision of Certain Interconnection Arrangements from the New England Tel. and Tel. Co., D.P.U. 90-206, D.P.U. 91-66 (Mass. Dept. Pub. Util. July 31, 1991 & Aug. 14, 1991) (approving interconnection agreement between New England Telephone and Teleport and the implementing tariff); Establishment of a Forum to Consider Rates, Rules, Practices and Policies of Pacific and GTE, I.90-02-047, No. 0001 (Calif. PUC Sept. 25, 1991) (approving interconnection agreement between Pacific Bell and Teleport Communications Group).

12 See Collocation and Interconnection Between Local Exchange Carriers and Competitive Access Providers, Advance Notice of Proposed Rulemaking, Docket No. 92R-050T at 1-2 and 4 (Colo. PUC Jan. 31, 1992) (proposing to allow telecommunications providers to collocate and interconnect with local exchange carriers' facilities); Public Service Commission Implementation of SB 2320-Subsidy Investigation, Case No. PU-2320-90-183, at 32 (N.D. PSC April 7, 1992) (requiring LECs to provide connections to the local exchange network that are equal to the connections available to the LEC for competing services); Metropolitan Fiber Systems of Baltimore, Inc. v. C&P Tel. Co. of Maryland, (Md. PSC, filed July 24, 1991). On October 1, 1992, in settlement of a complaint brought by MFS, Bell of Pennsylvania filed a tariff with the Pennsylvania Public Utility Commission offering intrastate expanded interconnection through both physical and virtual collocation. See also Metropolitan Fiber Systems v. Southwestern Bell Tel. Co., Docket No. 9640, Examiner's Order No. 22, (Tex. PUC, June 12, 1992) (holding activity in docket in abeyance until October 12, 1992 because of parties' involvement in related FCC interconnection proceedings); Application of Electric Lightwave, Inc., Docket No. UT-901029 (Wash. Util. & Trans. Comm. Dec. 6, 1991) (authorizing applicant to provide interexchange, but not intraexchange, special access service), clarified, recon. denied (Mar. 13, 1992).

II. PUBLIC POLICY ANALYSIS

8. Notice. The Commission tentatively concluded that expanded interconnection, with the likely resulting increase in competition, would produce substantial benefits for consumers that would outweigh potential costs. We observed that competition has produced important benefits in the interstate toll and customer premises equipment (CPE) markets, such as reduced rates, a larger variety of service options, and more rapid deployment of new technologies. We therefore tentatively concluded that the increased competition created by expanded interconnection also would: increase customer choice, particularly for customers in need of enhanced service reliability; increase LEC incentives for efficiency; spur the LECs to deploy new technologies and improve customer service; and yield cost-based prices for services subject to competition. While recognizing that competition will tend to bring pressure to reduce or even eliminate any non-economic support flows in the current special access tariffs, we also tentatively concluded that any necessary adjustments to LEC special access pricing could be readily achieved without undue hardship.[13]

9. Comments. The CAPs, users, and certain IXCs believe that the public benefits of expanded interstate special access interconnection are significant. They state that it will: improve network reliability through redundancy and route diversity; increase customer choice; improve LEC efficiency, service quality, and responsiveness; speed deployment of new technology; and bring more cost-based prices.[14] They also argue that increased competition will encourage development of innovative services.[15] MFS suggests that expanded interconnection will provide competitive alternatives to businesses that are located outside dense urban areas by making access to LEC low-density lines by interconnectors economically viable.[16] Many users also state that current CAP offerings provide improved service and superior technology.[17]

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[13] Notice, 6 FCC Rcd at 3260-61, ¶¶ 11-16.

[14] See, e.g., AT&T Comments at 3; CompTel Comments at 3-5; Mid-American Comments at 3-6; Teleport Comments at 4-6; FMR Comments at 3-5; MFS Comments at 9-14; Locate Comments at 3-7; Teleport Denver Comments at 5-6; ALTS Comments at 5-8; IDA Comments at 3-5; Ad Hoc Comments at 4-6; ANPA Comments at 2; API Comments at 3-9; AAR Comments at 2-5; Bankers Comments at 3-8; CompuServe Comments at 3-4; EDS Comments at 3-4; GSA Comments at 5-7; ICA Comments at 3-5; IIA Comments at 2; UTC Comments at 2-3; Wells Rural Electric Comments at 4-7. See also MetroComm Comments at 1.

[15] See, e.g., PCNS-NY Comments at 2-6; MFS Comments at 13-14; IDCMA Comments at 14-15. See also Justice Reply Comments at 24.

[16] MFS Comments at 14, n.17.

[17] See, e.g., API Comments at 4-9; Bankers Comments at 3-7; Wells Rural Comments at 4-5.

10. NTIA and the SBA agree that expanded interconnection will confer substantial benefits.[18] Justice also supports expanded interconnection for special access, arguing that it will remedy the inefficiencies of LEC special access pricing.[19] Justice believes that expanded interconnection is justified because of the LECs' market power over local loops, central office connections and switching, and their incentive to exclude competitors. Justice contends that competition will be more effective than reformed regulation in increasing efficiency.[20]

11. While generally agreeing that increased competition is a worthy goal, many LECs fear that the costs associated with our expanded interconnection proposal, as formulated in the Notice, exceed the advantages.[21] At the outset, they criticize our statement that competition in the interexchange market has been the impetus for sharply lower rates.[22] The LECs contend that the significant post-divestiture drop in long-distance rates is the result of the FCC's policy of rebalancing local and toll rates through subscriber line charges and separations changes.[23] They also express concern that expanded interconnection will cause harm not only to themselves, but also to local ratepayers.[24] In particular, Ameritech contends that the Commission proposal will be harmful unless implemented in conjunction with LEC pricing flexibility.[25] NYNEX argues that as a result of expanded interconnection, LECs will have to respond to competition in metropolitan areas,

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18 NTIA Reply Comments at 6-7; SBA Comments at 16-17.

19 Justice Reply Comments at 7-27.

20 Id.

21 See, e.g., Ameritech Comments at 2-24; SW Bell Comments at 1-43; BellSouth Comments at 1-5.

22 Notice, 6 FCC Rcd at 3260, ¶ 11; Ameritech Comments at 19-20; NYNEX Comments at 5-8; Alabama Reply Comments at 4.

23 See, e.g., NYNEX Comments at 5-8 and Taylor Study at 1-3; Bell Atlantic Comments at 10-11. MCI contends that the LECs are wrong in asserting that the consumer benefits seen in the interexchange market are not a result of competition. MCI Reply Comments at 13-16. MCI contends that the LEC study in this area fails to take into account all causes of pre- and post-divestiture price changes. MCI also asserts that the FCC would never have revised its access charge structure in the absence of competitive market forces. In addition, MCI argues that the LECs ignore the tangible non-price benefits, such as numerous new services, that are a result of interexchange competition. MCI Comments, Baseman Affidavit at 23-24.

24 See, e.g., Bell Atlantic Comments at 3-12; GTE Comments at 22-25; BellSouth Comments at 30-43.

25 Ameritech Comments at 37-41.

slowing the introduction of new technologies in rural areas.[26] SW Bell submits that LECS will lose hundreds of millions of dollars in revenue as a result of expanded interconnection, which will cause costs to shift to the state jurisdiction, force local exchange rates to increase,[27] and create a disincentive to invest in new technologies.[28]

12. A number of the small LECs argue that expanded interconnection could have adverse effects, hindering infrastructure development and potentially undermining universal service in rural areas.[29] They also express concern about potential adverse effects on current rate averaging.[30] Many of the state commissions also express concern that expanded interconnection will cause LEC revenue losses, stranded investment, jurisdictional cost shifts, and local rate increases that could detract from universal service.[31]

13. Discussion. Competition in the interexchange and CPE markets has brought consumers increased service options, reduced rates, and faster implementation of new technologies.[32] For example, prompted by the pressures

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26 NYNEX Comments at 8-9. See also Bell Atlantic Comments at 10-11; NTCA Comments at 3-4; NTCA Reply Comments at 6-9; OPASTCO Comments at 2-5; TDS Comments at 8-10.

27 SW Bell Reply Comments at 10-11 and Appendix A. In particular, SW Bell presents a study estimating that it could lose $332 to $696 million in interstate and intrastate revenues as a result of expanded interconnection, with a shift of $73.9 million to the state jurisdiction, and an increase of $0.34 to $0.64 in monthly basic local rates for residential customers. Id. at 18 and Appendix A, 25.

28 SW Bell Comments at 39-41.

29 See, e.g., TDS Comments at 21-22; OPASTCO Comments at 2-5. See also NCTA Reply Comments at 19-21.

30 See, e.g., TDS Comments at 7-8; TDS Reply Comments at 3-17; Kansas Independent Rural Telephone Companies Reply Comments at 7; OPASTCO Reply Comments at 3-7.

31 See, e.g., Florida Comments at 3-4; Alabama Reply Comments at 3-7.

32 See generally R. Crandall, After the Breakup: U.S. Telecommunications in a More Competitive Era (1991) (empirical analysis of benefits of interexchange and CPE competition); R. Noll & S. Smart, "Pricing of Telephone Services," in B. Cole, ed., After the Breakup: Assessing the New Post-Divestiture Era 185, 187 (1991) (federal policies caused CPE and interexchange prices to decline); A.D. Kelley, "Advances in Network Technology," in B. Cole, supra, at 347, 348 (CPE and interexchange competition caused increased diffusion of technological change and clear social benefits); Trends in Telephone Service at 8 (FCC Common Carrier Bureau, Industry Analysis Div., Sept. 1992) (during each year from 1984 to

of competition, the AT&T has introduced reduced rate calling plans for residential customers and businesses of all sizes.[33] AT&T's competitors also offer innovative calling plans.[34] In addition, interexchange competition has fostered the deployment of new technology. Sprint, for example, was the first IXC to construct a fully fiber optic network. The rate of innovation in both residential and business CPE also has increased dramatically since the introduction of competition, with an increased range of customer choices in telephone handsets, answering machines, key telephone systems, private branch exchange (PBX) equipment, facsimile machines, voice mail equipment, modems and other data communications equipment.[35] Inflation-adjusted charges for CPE have also fallen.[36]

1990, prices of interstate toll calls declined substantially relative to inflation).

[33] These include REACH-OUT America and AT&T PRO WATS, as well as Tariff 12 offerings. AT&T Communications, Tariff FCC No. 1, § 8; AT&T Communications, Tariff FCC No. 12.

The LECs are correct that a major portion of the dramatic post-divestiture rate reductions for Message Telephone Service (MTS), Wide Area Telephone Service (WATS) and 800 Service resulted from such regulatory changes as the implementation of Subscriber Line Charges (SLCs). Competitive services priced below AT&T's offerings, however, also have been a significant factor in pushing AT&T's rates lower. For example, the consumer benefits of the AT&T reduced rate calling plans and Tariff 12 offerings are independent of these regulatory changes, as are the innovative calling plans introduced by its competitors.

[34] The MCI Friends and Family calling plan, for instance, uses sophisticated billing software.

[35] See P. Huber, The Geodesic Network: 1987 Report on Competition in the Telephone Industry, 1.10-1.17 & chapters 10, 15-17 (U.S. Dept. of Justice, 1987).

[36] According to producer price indexes published by the U.S. Bureau of Labor Statistics, from December 1985 to August 1992, the prices of telephone handsets and station equipment decreased by 14%, the prices of digital PBXs with 400 or fewer lines decreased by 4%, and the prices of digital PBXs with more than 400 lines decreased by 11%. By contrast, the Consumer Price Index for all items rose by 29% during the same period.

14. We believe that increased competition will produce similar results in the interstate special access market.[37] The growth in competition resulting from expanded interconnection should increase LEC incentives for efficiency and encourage LECs to deploy new technologies facilitating innovative service offerings. It also should make the LECs more responsive to customers in providing existing services. Moreover, we believe that in many areas of the country, expanded interconnection will increase the choices available to access customers who value redundancy and route diversity. Network outages have increased awareness that even partial alternatives to the LEC networks may be valuable.[38] In addition, increased competition will tend to reduce prices for services available from both the LECs and alternative suppliers.[39]

15. Increased competition in the interstate special access market undoubtedly will result in some diversion of business from the LECs. We are convinced, however, that the dire predictions of revenue losses made by SW Bell, for example, are based on highly unrealistic assumptions.[40] The

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[37] Commenters have not demonstrated that the interstate special access market differs from the interexchange and CPE markets in ways that would prevent achievement of the benefits that we have seen in those markets. In fact, special access competition and the resulting benefits could develop more rapidly than interexchange competition.

[38] The actual increase in network reliability for customers brought about by expanded interconnection, of course, will be limited by the fact that certain LEC outages, such as a break in the cable facilities between the central office and user premises, also would interrupt service on CAP circuits interconnected with the disrupted LEC circuits.

[39] U S West alleges that the Notice and responsive comments will not provide a sufficient basis for Commission action. It argues that the Commission should withdraw the current Notice of Proposed Rulemaking and Notice of Inquiry, and institute an Inquiry concerning competition in the local exchange. U S West Reply Comments at 67-74. California also asserts that the Commission should perform further economic analysis of the viability of local competition. California Comments at 2-4. We disagree. The record in this proceeding and our own experience with the effects of competition in the interexchange and CPE markets provide an ample basis for our conclusion that expanded interconnection for the provision of special access will produce substantial benefits that outweigh any potential detriments.

[40] For example, SW Bell assumes that in the near term, the three largest IXCs would shift virtually all of their traffic above the end-office to CAPs in the wire centers where CAPs are located. See SW Bell Reply Comments, App. A at 4-22. This is based on the assumption that the LECs could not retain traffic by lowering their rates. SW Bell also assumes, incorrectly, that we would not allow any changes in its special access rates. Id. at 26. See infra ¶¶ 172-86. Even if the IXCs do not divide their traffic between CAPs and the LECs to achieve redundancy, we believe that the IXCs are unlikely to shift virtually all their traffic to the CAPs, at least

Tier 1 LECs already have significant pricing flexibility under price cap and rate-of-return regulation and we are authorizing some limited additional flexibility with the implementation of expanded interconnection. In light of this, we are convinced that the Tier 1 LECs will be able to compete effectively on the basis of price.

16. In the case of Tier 1 LECs, we do not believe that the implementation of expanded interconnection for special access will undermine service to rural areas. The record in this proceeding does not indicate that interstate special access service provides support for residential exchange service in rural areas. The LECs are unlikely to ignore the needs of rural customers large enough to use special access service. In fact, by permitting the LECs to make special access rates in rural areas more consistent with costs, this Order should encourage Tier 1 LECs to deliver state-of-the-art services to rural special access customers. We also have chosen to proceed cautiously by excluding the smaller LECs, which generally serve rural areas, from the expanded interconnection requirements.

17. Expanded interconnection for interstate special access indirectly may shift some costs to the state jurisdictions through the separations process. There is no basis, however, for concluding that such a shift would threaten universal service. Even the worst-case separations effects hypothesized by SW Bell are well under $1.00 per line per month -- not of a magnitude to threaten subscribership.[41] Nor do we find any basis for concluding that expanded interconnection for the provision of special access will result in deaveraged residential interstate MTS rates.[42]

18. Based on this analysis, we conclude that expanded interconnection for the provision of interstate special access service will produce benefits that substantially outweigh any potential drawbacks. Prompt Commission action is necessary to avoid delaying important benefits for telecommunications users, and the United States economy as a whole.

III. SCOPE AND TIMING OF COMMISSION ACTION

19. Notice. The Notice proposed expanded interconnection for the provision of special access. At the same time, we began an inquiry to gather

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until the CAPs have established a track record of reliability in handling larger traffic volumes. Finally, SW Bell's projections attribute all special access traffic losses to expanded interconnection, and fail to take into account the traffic that it would lose to the CAPs as a result of end-to-end bypass even without expanded interconnection.

[41] By comparison, telephone subscribership increased during implementation of the residential $3.50 subscriber line charge. See Trends in Telephone Service at 1-3.

[42] Special access is used in conjunction with private line service, WATS, 800 Service, and various high-volume business services, such as AT&T's Megacom and SDN services. It is not used in the provision of MTS.

additional information before determining whether to propose expanded interconnection for the provision of switched transport. We did not specifically discuss the relationship of these proceedings to other matters, such as modification of the switched transport rate structure or comprehensive separations and access reform.

20. Comments. In their initial comments, many of the LECs argue that the Commission should consolidate the expanded interconnection proceeding into a comprehensive access proceeding.[43] Many of the LECs also contend that the Commission must change the transport rate structure prior to implementing expanded interconnection at all, or that the Commission should consider expanded interconnection for special access and switched transport simultaneously, given the high degree of cross-elasticity between the two services.[44] In addition, several LECs, NARUC, and several state commissions argue that a Joint Board should be convened to consider issues such as changes to the separations rules before the Commission implements expanded interconnection.[45] Some states argue that a Joint Board also should conduct a review of Part 69 and address the right to and price of collocation, as well as which services, exchanges, and companies would be covered by a new special access rule.[46] Certain states and NARUC also argue that expanded interconnection should be considered in conjunction with other related issues, such as preemption of intrastate interconnection policy, impact on access rate structure, potential deaveraging of toll, access and local rates, and pricing of transport.[47]

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[43] See, e.g., Ameritech Reply Comments at 4-8; Pacific Comments at 6-10; GTE Comments at 11-19; BellSouth Comments at 18-19, 43; BellSouth Reply Comments at 2-6, 34; United Comments at 1-2, 22-23; Cincinnati Bell Comments at 9-10; USTA Comments at 2-8; SW Bell Reply Comments at 1-7; GTE Reply Comments at 28-32; Centel Reply Comments at 3-5.

[44] See, e.g., BellSouth Comments at 4, 7-18; Ameritech Comments at 34-36 & App. (Levin Affidavit) at 12-18; GTE Comments at 11-18, 51-52; SW Bell Comments at 13-20; United Comments at 1-2, 22; Lincoln Comments at 3; Texas Telephone Ass'n Reply Comments at 4; BellSouth Comments at 4, 7-12; Ameritech Comments at 34-36; GTE Comments at 11-17, 51-52; SW Bell Comments at 13-20; United Comments at 1-2, 22; Lincoln Comments at 3; SW Bell Reply Comments at 19-21; NTCA Reply Comments at 16-18. See also TDS Reply Comments at 24-27; Tallon Cheeseman Reply Comments at 4-8.

[45] See, e.g., SW Bell Comments at 35-38; SW Bell Reply Comments at 50; Lincoln Comments at 3; TDS Comments at 21-22; NTCA Reply Comments at 21-22; NARUC Comments at 12-14; Virginia Comments at 6. See also Arkansas/Missouri Reply Comments at 7-8; Minnesota Dept. Reply Comments at 4-6; Minnesota Commission Reply Comments at 4-6.

[46] Arkansas/Missouri Reply Comments at 8; Minnesota Dept. Reply Comments at 6; Minnesota Commission Reply Comments at 6.

[47] See, e.g., NARUC Comments at 4-12; California Reply Comments at 1-2.

21. USTA subsequently proposed that special access interconnection be implemented concurrently with the common/dedicated rate structure proposed in the transport proceeding.[48] USTA also urges the Commission to institute promptly a comprehensive access charge reform proceeding designed to reduce LEC regulation.[49] USTA argues that the revised access charge structure resulting from the comprehensive access reform proceeding should be adopted at the same time as expanded interconnection for switched transport.[50]

22. Most IXCs generally argue that the Commission should conduct proceedings addressing access charge reform issues before or in conjunction with implementing expanded interconnection for special access or switched transport.[51] They differ, however, on whether expanded interconnection for special access and switched transport should be considered simultaneously.[52]

23. The CAPs and users argue that the Commission should not delay the introduction of expanded interconnection for special access pending a broader access restructure proceeding.[53] They also dispute the LEC contentions that switched and special access are so cross-elastic that the Commission must act on special and switched transport interconnection simultaneously.[54] Teleport suggests that we move swiftly to implement expanded interconnection for both special access and switched transport, requiring CAPs to employ the same terms and rate structure as the LECs until the Commission resolves the transport pricing issues.[55] CAPs strongly oppose referral of separations issues to a Joint Board before the Commission decides expanded interconnection issues, and MFS adds that the Commission should

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48 USTA Ex Parte (June 22, 1992); USTA Ex Parte (July 1, 1992).

49 USTA Ex Parte (Feb. 21, 1992).

50 USTA Ex Parte (June 22, 1992); USTA Ex Parte (July 1, 1992).

51 See, e.g., MCI Comments at 30-31; MCI Reply Comments at 75; Allnet Comments at 7-8; Sprint Comments at 8-9; Sprint Reply Comments at 2-12. While AT&T advocates implementation of a cost-causative local transport rate structure before implementation of expanded interconnection for switched services, its primary focus appears to be on eliminating the need for a contribution charge. AT&T Comments at 11-14.

52 Compare MCI Comments at 31-33 with Sprint Comments at 4-8 and Sprint Reply Comments at 2-9.

53 See, e.g., MFS Reply Comments at 10-13; Ad Hoc Reply Comments at 28-30; GSA Reply Comments at 3-5; ICA Reply Comments at 3-6; Teleport Reply Comments at 2-8; Electric Lightwave Reply Comments at 1.

54 See, e.g., MFS Reply Comments at 18-23; Teleport Reply Comments at 3-8.

55 Teleport Comments at 40-45; Teleport Reply Comments at 3-8.

expressly determine that this is not a proceeding in which such referral is mandatory under Section 410(c).[56]

24. NTIA argues that the Commission should consider expanded interconnection for special access and switched transport in a carefully coordinated fashion given the cross elasticity of demand between the two services. It urges the Commission to adopt a Notice of Proposed Rulemaking promptly proposing expanded interconnection for switched transport.[57]

25. Discussion. We recognize the relationship between expanded interconnection and other access and separations issues, and are committed to considering these issues in an integrated fashion. Despite this, we do not believe that expanded interconnection issues should be incorporated in a broader proceeding and considered at the same time as other access charge reform issues. While we will need to consider broader access reform as competition develops, this is not necessary before implementing expanded interconnection for special access in light of existing LEC pricing flexibility and the additional measures adopted in this Order.

26. Although some cross-elasticity exists between special and switched access, we need not delay acting on special access expanded interconnection until we have completed the comprehensive proceeding advocated by some parties. There has been a significant pricing disparity between special and switched access services for many years that, as noted by a number of the commenting parties,[58] already has caused significant migration by large users. There is no credible showing in this record that significant additional migration will occur with the implementation of expanded interconnection for special access. Indeed, based on the position taken in USTA ex parte filings, it appears that the Tier 1 LECs affected by this proposal agree with our conclusion that we can adopt special access expanded interconnection before adopting expanded interconnection for switched transport.[59]

27. As discussed in greater detail below, we are referring certain separations issues raised by expanded interconnection to the Joint Board in

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56 MFS Reply Comments at 13-17. See also Ad Hoc Comments at 35 (asserting that separations impacts are unlikely).

57 NTIA Reply Comments at 21-24.

58 See, e.g., Teleport Reply Comments at 3-8; MFS Reply Comments at 19-23.

59 The comprehensive plan submitted by USTA proposes that the Commission proceed with an order on special access interconnection, but postpone implementation of expanded interconnection for switched transport. USTA Ex Parte (Mar. 3, 1992) and USTA Ex Parte (June 22, 1992).

CC Docket No. 80-286.[60] We believe, however, that the Joint Board will be better able to develop appropriate implementing separations changes after we have adopted an expanded interconnection architecture and rate structure. We do not find the contentions that there would be separations effects sufficient to warrant delay pending development of Joint Board recommendations. While we are aware of the potential implications of this proceeding for state regulatory choices, we do not believe that the non-separations issues here should be referred to a Joint Board. Among other things, such a referral would delay implementation of special access expanded interconnection.

28. In light of the potential benefits, we conclude that the Commission should move forward to adopt rules for special access expanded interconnection without further delay.[61] While other access and separations issues will be considered in separate proceedings, those decisions will fully reflect our actions on expanded interconnection, and the realities of growing access competition.[62]

IV. INTERCONNECTION ARCHITECTURE

29. Notice. We tentatively concluded that we should require implementation of expanded interconnection for special access, but allow each LEC to decide whether to satisfy this requirement through virtual or physical collocation. Our purpose in defining the rights of interconnecting parties was to achieve the major benefits of physical collocation while permitting the LECs a viable choice between physical and virtual collocation.[63] Thus, under virtual collocation arrangements, we proposed to allow interconnecting parties to monitor and control their circuits terminating in the LEC central office. In addition, we tentatively concluded that LECs should be under an obligation to make reasonably available central office electronic equipment designated by interconnectors.

30. Comments. The LECs argue that the Commission should permit them to decide whether to provide physical or virtual collocation, stating

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60 See infra ¶¶ 247-48; Expanded Interconnection with Local Telephone Facilities, Second Notice of Proposed Rulemaking, FCC 92-441, CC Docket No. 91-141, at ¶¶ 54-55 (adopted Sept. 17, 1992) (Second Notice).

61 Today, we also have proposed extending expanded interconnection to the provision of switched transport, and have adopted an order modifying the rate structure and pricing of LEC-provided switched transport. See Second Notice; Transport Rate Structure and Pricing, FCC 92-442, CC Docket No. 91-141 (adopted Sept. 17, 1992) (Transport Order).

62 The Commission has ample authority to conduct its proceedings in this fashion pursuant to Section 4(j) of the Communications Act, 47 U.S.C. § 154(j).

63 Notice, 6 FCC Rcd at 3261-62, ¶¶ 17-18.

that virtual collocation would meet the Commission's goals.[64] Several LECs also contend that virtual collocation arrangements should not have to be technically and economically equal to the LECs' own interconnections.[65] Although some LECs state that they would choose physical collocation at the majority of their central offices,[66] the LECs generally claim that the choice should reflect the circumstances in individual central offices, including space availability, office design, security, equipment type, power requirements, and staffing. GTE, for example, argues that there would not be sufficient space for physical collocation in certain new offices.[67] A number of LECs also argue that they should not be required to provide both physical and virtual collocation.[68] In addition, many LECs argue that the Commission does not have authority under Section 201(a) of the Communications Act to order physical collocation because the lease of central office space is not a communications service, and that the Commission does not have power to govern interconnection arrangements between carriers and noncarriers.[69]

31. A number of the state commissions generally support giving LECs the option of providing physical or virtual collocation rather than mandating physical collocation.[70] Illinois, for example, has approved an intrastate virtual collocation arrangement between Illinois Bell and Teleport.[71] Several states also argue that virtual interconnectors should receive the same pricing and other rights as physical interconnectors.[72]

32. In their original comments, most CAPs argue that the Commission should require LECs to provide physical collocation unless the LECs can demonstrate that insufficient space exists in a given central

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64 See, e.g., Ameritech Reply Comments at 13-19; BellSouth Comments at 48-49, 52-54.

65 See Ameritech Reply Comments at 24-30. See also BellSouth Comments at 52-53; BellSouth Reply Comments at 15.

66 See, e.g., Pacific Reply Comments at 75-81; Cincinnati Bell Comments at 7. See also NYNEX Comments at 11-14.

67 GTE Reply Comments at 61-64 & App. F. See also GTE Comments at 31-33; Rochester Reply Comments at 12-14.

68 See, e.g., NYNEX Comments at 11-12; Pacific Reply Comments at 75-81.

69 See, e.g., Pacific Comments at 68-70; Pacific Reply Comments at 97-98; Rochester Comments at 9-11. The small LECs generally do not address the issue of legal authority to mandate physical collocation.

70 See, e.g., Florida Comments at 4-5; Illinois Comments at 3-4; Michigan Comments at 5; New York Comments at 8-9.

71 Illinois Comments at 6.

72 See, e.g., New York Comments at 8-10; Florida Comments at 5-6.

office.[73] In conjunction with this, the CAPs generally contend that interconnection arrangements should be technically and economically comparable to the interconnections LECs provide themselves. Several argue that virtual collocation would create so many administrative problems and inefficiencies that it would be impossible to design a virtual collocation arrangement equivalent to physical collocation.[74] These CAPs also allege that virtual collocation will increase the potential for disputes between the LECs and CAPs. While citing physical collocation as the ideal, Teleport recognizes that certain forms of virtual collocation can satisfy interconnector needs.[75] Most of the CAPs, including Teleport, subsequently submitted an ex parte document proposing that CAPs be entitled to choose between physical and virtual collocation.[76]

33. Non-dominant IXCs, large users, enhanced service providers, and IDCMA generally urge the Commission to mandate physically collocated interconnection and to permit virtual collocation only if the LEC demonstrates that physical collocation at a particular central office is impossible.[77] They state that physical collocation is feasible,[78] and several assert that this is the best way to ensure that the LECs provide interconnection on the same terms and conditions that they provide interconnection to themselves.[79]

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73 See, e.g., Locate Comments at 13-14; IDA Comments at 6; Teleport Denver Comments at 6-7; Penn Access Comments at 2-3; ALTS Comments at 15-21; ICC Comments at 2-13; MFS Comments at 29-31; Intermedia Reply Comments at 1. See also MetroComm Comments at 2.

74 See, e.g., MFS Comments at 29-41; IDA Comments at 6-9; ICC Comments at 4-8; McCaw Reply Comments at 9-16. In particular, MFS argues that the time required to train LEC employees to install, maintain, and repair CAP equipment will delay implementation of initial service and subsequent equipment upgrades. MFS Comments at 31-37.

75 Teleport Comments at v. See also Teleport Comments at 22-33.

76 ALTS Ex Parte at 1 (Mar. 30, 1992).

77 See, e.g., WilTel Comments at 17; MCI Reply Comments at 56; AAR Comments at 8-10; API Comments at 14-17; Bankers Comments at 9-14; EDS Comments at 5; GSA Comments at 7-8; ICA Comments at 5-7; UTC Comments at 3-6; IDCMA Comments at 5-8. API also alleges that virtual collocation would compromise route diversity. API Comments at 15-16. Compuserve contends that users should be able to choose between physical and virtual collocation. CompuServe Comments at 6.

78 See, e.g., MidAmerican Comments at 6-7; WilTel Comments at 7; WilTel Reply Comments at 5; CompTel Reply Comments at 17.

79 See, e.g., MCI Comments at 7; CompTel Comments at 13. See also MidAmerican Reply Comments at 4-5. For example, some IXCs suggest that LECs could abuse their control over the installation and maintenance of

34. NTIA believes that the Commission should mandate expanded interconnection, but need not specify a single interconnection arrangement. Instead, it argues that we should allow LECs and interconnectors to negotiate mutually acceptable arrangements on an individual case basis,[80] which would be tariffed to facilitate regulatory review and enforcement of nondiscrimination requirements.[81] The SBA and Justice urge the Commission to require LECs to provide physically collocated interconnection,[82] with Justice arguing that there would be a greater potential for LEC discrimination against competitors under virtual collocation than under physical collocation.[83]

35. Many of the LECs generally concede that virtually collocated interconnectors should be able to specify equipment that meets certain objective standards, so long as they absorb all the costs associated with installation and maintenance, including training of LEC personnel.[84] Some LECs suggest that interconnectors be required to select equipment from a list of products approved by the LEC.[85] USTA argues that LECs should be allowed to develop equipment specification standards on a voluntary basis, rather than under mandatory rules imposed by the Commission.[86]

36. A number of the LECs are willing to allow interconnectors to monitor and control their equipment remotely under virtual collocation, as long as the interconnectors pay associated costs.[87] SW Bell, on the other hand, argues that given the LECs' technical abilities, monitoring and control

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competitors' interconnection facilities and could impose delays, provide degraded service, or obtain sensitive information. See, e.g., WilTel Comments at 15-17; MidAmerican Comments at 6-7; MCI Reply Comments at 54-56.

80 NTIA Reply Comments at 9-12.

81 Id. at 10-12.

82 Justice Reply Comments at 33-39; SBA Comments at 21-22 (SBA recognizes, however, that virtual collocation may be appropriate if there are space or security problems with physical).

83 Justice Reply Comments at 34-37.

84 See, e.g., Bell Atlantic Comments at A-6-7; Pacific Comments at 75; Ameritech Comments at 64; Rochester Comments at 13-15; United Comments at 5-6. See also SW Bell Comments, App. C at 14-15; Lincoln Comments at 7; USTA Comments at 21-26; SNET Comments at 13-14.

85 U S West Comments at 32 & n.56; BellSouth Comments at 58; BellSouth Reply Comments at 15 n.31; GTE Comments at 35.

86 USTA Comments at 21-26.

87 See, e.g., Bell Atlantic Comments at A-8; Pacific Comments at 73; BellSouth Comments at 59-60; GTE Comments at 36-37; Rochester Comments at 16.

by interconnectors is neither desirable nor necessary.[88]

37. The CAPs, IXCs, users, and state commissions support the Commission's proposal that LECs be required to make available central office electronic equipment designated by interconnectors under virtual collocation.[89] MFS and Locate argue that the LEC should bear any additional costs resulting from equipment designation, such as training LEC personnel to install, maintain and repair unfamiliar equipment.[90] AT&T, however, believes that additional costs should be borne by interconnectors.

38. The CAPs, IXCs, users, and most state commissions contend that interconnectors' ability to monitor and control the electronic equipment dedicated to their use is important to facilitate competitive provision of high capacity circuits.[91] According to Teleport, monitoring and control is vital because it permits the company to maintain its quality and reliability standards, and assists in controlling costs. The CAPs also argue that monitoring and control reduce the potential for conflicts of interest that would exist if the LECs could control the operational and technical characteristics of interconnected circuits. Users state that interconnectors should be allowed to monitor and control interconnected circuits in order to detect and correct service problems. Justice also supports interconnector monitoring and control.[92]

39. Discussion. Based on the record developed in this proceeding, it is evident that almost all interconnectors believe strongly that physical collocation best ensures that they are provided interconnection on the same terms and conditions as the LECs interconnect their own circuits. The Commission is committed to ensuring fair opportunities for all market participants, including interconnectors, to compete in providing access services. For this reason, interconnectors should have the right to obtain

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88 SW Bell Comments, App. C at 18-19.

89 See, e.g., Locate Comments at 38; Teleport Denver Comments at 8; FMR Comments at 16; ALTS Comments at 20-21; MFS Comments at 63-65; Teleport Comments at 13, 25-28; AT&T Comments at 15; MCI Comments at 34; WilTel Comments at 11-13; Ad Hoc Comments at 26; Bankers Comments at 14-15; IDCMA Comments at 17-18; SBA Comments at 26; Florida Comments at 6; Illinois Comments at 6-7.

90 MFS Comments at 63-65; Locate Comments at 38-39. Locate also argues that LEC charges for installation, maintenance and repair should reflect CAP wage rates. Id.

91 See, e.g., Teleport Comments at 25-28; MFS Comments at 61-62; MFS Reply Comments at 36 n.32; ALTS Comments at 20-21; FMR Comments at 16; WilTel Comments at 11-14; MCI Reply Comments at 57; Ad Hoc Comments at 25-26; Bankers Comments at 15; EDS Comments at 6-7; GSA Comments at 9; SBA Comments at 25-26; Florida Comments at 5; New York Comments at 9.

92 Justice Reply Comments at 43-45.

physical collocation from LECs. We therefore require the LECs subject to this Order to make physical collocation available to all interconnectors that request it. Under this form of collocation, the interconnecting party pays for LEC central office space in which to locate the equipment necessary to terminate its transmission links, and has physical access to the LEC central office to install, maintain, and repair this equipment.[93]

40. The parties remain free, under our approach, to negotiate satisfactory virtual collocation arrangements if such arrangements are preferable to physical collocation from the point of view of both parties. We also believe that interconnectors using virtual collocation arrangements should be guaranteed certain minimum standards. Our approach allows and encourages the parties -- since they are in the best position to negotiate the specifics of a collocation arrangement -- to adapt their arrangements as necessary to reflect differing physical and technical conditions. Thus, although all interconnectors will have a right to physical collocation if they choose, we envision that LECs and interconnectors may be able to negotiate virtual collocation arrangements sufficiently comparable in quality to physical collocation that interconnectors may choose virtual rather than physical collocation.[94]

41. Based on the record before us, we can envision only two reasons that would justify granting a LEC an exemption from the requirement that it make the option of physical collocation available.[95] The first would be a demonstration by the LEC that a particular central office lacks

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93 When the Commission considered similar collocation issues in the Computer III and Open Network Architecture proceedings, we rejected proposals for mandatory collocation of enhanced service provider equipment in Bell Operating Company (BOC) central offices. We found that voluntary BOC use of price parity rules, a form of virtual collocation, fully addressed the competitive needs demonstrated by enhanced service providers. See infra ¶¶ 93-94. The circumstances in Computer III are clearly distinguishable from those before us in this proceeding. Here, the transmission equipment owned or used by the interconnector must, as a technical matter, be located in the LEC central office in order to terminate the interconnector-provided circuit at that location. By contrast, the enhanced service equipment at issue in Computer III could readily be located outside the LEC central office and achieve technical comparability with LEC enhanced service equipment located inside the central office.

94 See infra ¶¶ 219-40 (discussing our legal authority to order the LECs to make physical collocation available to interconnectors that request it.)

95 We delegate authority to the Chief, Common Carrier Bureau, to act on requests for exemption from this requirement. The Bureau Chief is also delegated authority to establish pleading cycles and other procedures designed to facilitate efficient and timely review of exemption petitions.

physical space to accommodate physical collocation.[96] The second would be a formal decision by a state legislature or public utility regulatory agency, after proceedings allowing all interested parties a reasonable opportunity to be heard, in favor of virtual collocation rather than physical collocation for intrastate expanded interconnection, or in favor of allowing LECs to choose which form of interconnection to use for intrastate expanded interconnection. Exemption requests based on such final state decisions must be submitted by the date for filing the interstate tariffs required by this Order.[97] We are allowing this limited exemption to accommodate the states to the extent possible, consistent with our federal policy in favor of physical collocation. After the filing of the interstate tariffs, however, the balance of relevant interests shifts in favor of according greater protection to interconnectors' expectations regarding the type of interconnection that will be available. We note that this is the only instance in which the Commission's interest in ensuring physical collocation for interstate services should give way to a state's preference for virtual collocation.[98]

42. We believe that this approach will have a number of significant benefits. It will ensure that the interconnection available to interested parties is comparable to that used by the LEC for its own circuits. In particular, making physical collocation available will avoid the operational differences inherent in virtual collocation, where the interconnector is forced to rely on its LEC competitor for installation, maintenance, and repair. This approach will also reduce the potential for regulatory disputes and delay that may result under virtual collocation. At the same time, it will permit interconnectors and the LECs ample opportunity to negotiate virtual collocation arrangements. This approach also permits us to reduce the potential for conflict with state policies while providing important protections for interconnectors.

43. Consistent with this approach, we are also imposing specific conditions on LEC provision of virtual collocation in order to minimize any technical differences between physical and virtual collocation. We believe

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96 See infra ¶¶ 77-80 (requirement that LECs make virtual collocation available in any central office in which space for physical collocation has been exhausted) and ¶ 260 (procedures applicable to exemption petitions). Space limitations may arise in certain central offices built after the downsizing of electronic switching equipment, which are typically smaller than those constructed to accommodate earlier generations of central office equipment.

97 Exemption requests must include a copy of the final state decision. State public utility regulatory agency decisions approving LEC/CAP settlement agreements providing for intrastate implementation of virtual collocation will not by themselves be deemed formal decisions in favor of virtual collocation or LEC choice of interconnection architecture for this purpose.

98 After the filing of the LECs' interstate expanded interconnection tariffs, interested parties would remain free to petition for waiver of our general physical collocation requirement based on unique circumstances.

that this is necessary since virtual collocation will be the only option available to interconnectors in certain offices. It will also protect interconnectors in central offices where space is exhausted before all interested parties are accommodated. We also believe that interconnectors desiring virtual collocation should be guaranteed certain minimum standards for their interconnection arrangements.

44. We conclude that interconnectors using virtual collocation arrangements should be allowed to designate the central office transmission equipment dedicated to their use,[99] as well as monitor and control their circuits terminating in the LEC central office.[100] Under expanded interconnection, the central office electronics dedicated to the interconnector's use is an integral part of the interconnected circuit. Equipment designation will give interconnectors greater flexibility in ensuring compatibility between their network equipment and the central office equipment dedicated to their use. We see no reason to limit interconnector equipment selections to a list developed by the LEC, although the designated equipment must meet applicable fire and safety codes.[101] While interconnector designation of numerous types of equipment unfamiliar to LEC technicians theoretically could impose unreasonable burdens on the LECs, we believe that this is unlikely. We also conclude that the LECs should be permitted to require that an interconnector bear any additional costs reasonably incurred by the LECs as a result of the interconnector's choice of

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99 Thus, the equipment used to terminate interconnected circuits would be located in the LEC central office under both virtual and physical collocation.

100 Several parties also cite a desire for financial arrangements governing lease or ownership of interconnector central office electronics and interconnecting fiber that replicate the ownership benefits of physical collocation. For example, in certain state collocation arrangements, the CAPs sell or lease their designated central office equipment to the LEC with the LEC recouping these costs from the CAP and also charging the CAP for installation, maintenance, repair, and other operating expenses. We are leaving the terms associated with the provision of central office electronics to be negotiated between the LEC and the interconnector. Those negotiated terms will, however, be reviewed in the tariff review process.

101 Additionally, we will require interconnectors to comply with any rules adopted by the Commission based on the "best practices" and related network integrity and operational safeguards now being developed under the aegis of the Commission's Network Reliability Council (of which several CAPs as well as major users and user groups are members). It is important that no steps be taken which could affect the high level of network reliability currently enjoyed by telephone subscribers generally. In the unlikely event that interconnector-designated equipment or operating practices represented a significant and demonstrable technical threat to the LEC network, moreover, the LEC would be allowed to proscribe use of such equipment or practices. We will scrutinize any such instances brought to our attention carefully, however, and expect them to be rare.

equipment.[102]

45. We conclude as well that safeguards are necessary to protect against possible LEC discrimination in installation, maintenance, and repair of interconnector-designated equipment under virtual collocation. We require that the LECs, at a minimum, install, maintain and repair interconnector equipment under the same time intervals and with the same failure rates that apply to the performance of similar functions for comparable LEC equipment.[103] To provide a foundation for evaluating possible complaints, we

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[102] In the Notice, we sought comment on what network disclosure rules should apply to electronic equipment provided by LECs and designated by interconnectors in virtual collocation arrangements. Notice, 6 FCC Rcd at 3263 n.23. Several parties submitted comments on this issue. See Bell Atlantic Comments at A-3 to A-4; BellSouth Comments at 61-64; GTE Comments at 36; USTA Comments at 26-28; NYNEX Reply Comments at Exh. 18; Ameritech Comments at 67-69; Ameritech Reply Comments at 38-40; U S West Comments at 31-37; Rochester Comments at 14-15; IDCMA Comments at 18-21; IDCMA Reply Comments at 22-31; NATA Reply Comments at 1-8; ICC Comments at 17-18; MCI Comments at 8-10; Florida Comments at 6-7; Illinois Comments at 6-7.

Our Part 68 rules require the LECs to disclose information regarding their network interfaces with interconnectors at the cross-connect point. 47 C.F.R. § 68.110. Under virtual collocation, interconnectors will designate the type of electronic equipment used in the central office for termination of their circuits. As a result, we find that the LECs' network disclosure obligations do not apply to the electronic equipment designated by an interconnector under virtual collocation arrangements. Carriers other than the LECs are subject to independent network disclosure requirements, however. See Amendment of Section 64.702 of the Commission's Rules and Regulations (Second Computer Inquiry), Reconsideration Order, 84 FCC 2d 50, 82-83 (1980), aff'd sub nom. Computer & Communications Indus. Ass'n v. FCC, 693 F.2d 198 (D.C. Cir. 1982), cert. denied, 461 U.S. 938 (1983); Competition in the Interstate Interexchange Marketplace, 6 FCC Rcd 5880, 5911 n.270 (1991), recon., 6 FCC Rcd 7569 (1991), recon., 7 FCC Rcd 2677 (1992), pets. for recon. pending (Interexchange Order). Thus, carriers interconnecting with the LECs pursuant to expanded interconnection will have to disclose certain network information concerning the equipment that they place, or designate for placement, in the LEC central office. Moreover, we believe that interconnectors will have an economic incentive to select equipment that is compatible with CPE possessing standard interfaces. We believe that this simply clarifies the existing network disclosure requirements, and that no revision of the rules is necessary.

[103] One CAP, Locate, argues that LECs should be required to install, maintain, and repair equipment dedicated to CAPs according to performance standards established by interconnectors. Such a requirement would be unreasonably burdensome, as it could require LECs to maintain and repair their competitors' equipment faster and more effectively than the LECs maintain and repair their own. While we do not believe that this standard is necessary to satisfy the legitimate needs of interconnectors, LECs and inter-

will require LECs to keep records and file reports annually on the installation, maintenance, and repair times for comparable LEC and interconnector equipment and circuits.[104] In the unlikely event that problems develop with LEC installation, maintenance, and repair under virtual collocation, we will take corrective action.

46. Interconnector monitoring and control is critical for interconnector maintenance of quality standards because it permits the CAP to detect and correct service problems on its interconnected circuits. The Commission has previously recognized the importance of monitoring and control in the context of ONA and state expanded interconnection arrangements also generally allow monitoring and control.[105] As the LECs have failed to present persuasive reasons for preventing interstate special access interconnectors from performing this function for themselves, we conclude that they should be allowed to do so under virtual collocation.

V. AVAILABILITY OF EXPANDED INTERCONNECTION

A. Parties Who Must Provide Expanded Interconnection

47. Notice. We tentatively concluded that our proposed expanded interconnection rules should apply only to Tier 1 LECs. We also asked for comment on the desirability of developing criteria for excluding sparsely populated service areas of Tier 1 LECs from the requirement and invited parties proposing broader application of expanded interconnection obligations to address the effects on smaller LECs.

48. Comments. The LECs generally agree with our proposal that all non-Tier 1 LECs be exempted from mandatory implementation of expanded interconnection. The LECs have different viewpoints, however, regarding which Tier 1 LECs or Tier 1 LEC territories, especially rural areas, should be exempt from expanded interconnection. Pacific, for example, argues that LECs serving sparsely populated areas should be excluded from general tariffing requirements, required to comply with collocation guidelines only upon bona fide request, and permitted to price on an individual case basis.[106] The

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connectors, of course, are free to negotiate such terms for virtual collocation on their own. Interconnectors can achieve a high level of reliability through the use of electronics with redundant components, and monitoring and control, rather than through expedited repair procedures. In addition, we note that by interconnecting with the LEC network rather than bypassing it entirely, interconnectors are, in essence, accepting LEC performance standards on the LEC circuit to which they are connected.

104 We delegate authority to develop the detailed requirements for these reports to the Chief, Common Carrier Bureau.

105 The LECs, however, may provide monitoring and control functions for interested interconnectors.

106 Pacific Comments at 76-79; Pacific Reply Comments at 101-02.